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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/694,486	10/27/2003	Derryll D.J. Allman	01-689	4290
24319	7590	09/07/2004	EXAMINER	
LSI LOGIC CORPORATION 1621 BARBER LANE MS: D-106 LEGAL MILPITAS, CA 95035			BEREZNY, NEMA O	
			ART UNIT	PAPER NUMBER
			2813	

DATE MAILED: 09/07/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/694,486

Applicant(s)

ALLMAN ET AL.

Examiner

Nema O Berezny

Art Unit

2813

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 and 19-23 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-9 and 19-23 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: ____.

DETAILED ACTION

Claims pending for this Office Action are claims 1-9 and 19-23.

Priority

An application in which the benefits of an earlier application are desired must contain a specific reference to the prior application(s) in the first sentence of the specification or in an application data sheet (37 CFR 1.78(a)(2) and (a)(5)). The specific reference to any prior nonprovisional application must include the relationship (i.e., continuation, divisional, or continuation-in-part) between the applications except when the reference is to a prior application of a CPA assigned the same application number. Reference to S/N 10/007,247 (Pat No 6,678,950), a divisional of instant application must be made to obtain benefits of said S/N.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-2, 4-5, 7, 9, 19, and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shiue et al. (5,700,735) in view of Chen et al. (6,560,862). Shiue discloses a bonding pad for an integrated circuit and an integrated circuit comprising said bonding pad, the bonding pad comprising (col.1 lines 33-37): a conductive base

layer (Fig.3 el.36) having slots formed therein, the slots extending completely through the conductive base layer (Fig.3), an insulating layer (el.48) disposed on top of the conductive base layer, the insulating layer protruding into the slots of the conductive base layer (Fig.3), and a conductive top layer (el.30) disposed on top of the insulating layer. However, Shiue does not disclose an insulating layer including a low k material. Shiue would look to one such as Chen for isolation of adjacent conductors because Chen discloses an insulating layer comprising a low k material (col.2 lines 60-62). Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention to use the low k material of Chen with the bonding pad of Shiue because a low k material isolates adjacent conductors and reduces capacitance better than a non-low k material (inherent property of low k material) **[claims 1, 9, 19]**. Shiue also discloses further comprising a plurality of vias extending through the insulating layer and electrically connecting the conductive base layer to the conductive top layer at peripheral portions of the conductive base layer and the conductive top layer (Fig.3) **[claim 2]**; wherein both the conductive base layer and the conductive top layer comprise a metal selected from the group consisting of aluminum, copper, nickel, ruthenium, titanium, tungsten, platinum, and gold (col.3 lines 6-25) **[claim 4]**; wherein the slots of the conductive base layer comprise a pattern of substantially parallel slots (Fig.3) **[claim 5]**; wherein the insulating layer has a thickness measured between the conductive base layer and the conductive top layer of from about three thousand angstroms to about fifteen thousand angstroms (col.3 lines 34-37) **[claims 7, 22]**.

Claims 6 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shiue et al. (5,700,735) in view of Chen et al. (6,560,862). Shiue in view of Chen do not disclose wherein the slots of the conductive base layer have a width of about eleven microns and a spacing of about three microns. Note that the specification contains no disclosure of either the critical nature of the claimed dimensions or any unexpected results arising therefrom. Where patentability is said to be based upon particular chosen dimensions or upon another variable recited in a claim, the Applicant must show that the chosen dimensions are critical. In re Woodruff, 919 F.2d 1575, 1578, 16 USPQ2d 1934, 1936 (Fed. Cir. 1990).

Claims 3, 8, 20, and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shiue in view of Chen as applied to claims 1 and 19 above, and further in view of Lou et al. (5,916,823). Chen discloses multiple layers of a conductive base layer (col.3 lines 12-15). However, Shiue in view of Chen do not disclose multiple layers of the overlying insulating layer. Shiue and Chen would look to one such as Lou for improving insulating quality and adhesion because Lou discloses wherein the insulating layer comprises a base oxide layer on top of the conductive base layer, a low k dielectric layer on top of the base oxide layer, and a cap oxide layer between the low k dielectric layer and the conductive top layer (col.2 lines 23-53). Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention to use the multiple insulating layers of Lou with the bonding pad of Shiue and Chen because a base oxide layer provides high quality insulation next to the metal layers (Lou – col.2

lines 29-31), and a cap oxide layer circumvents the poor adhesion attained by forming a bonding pad in contact with a low k material (Chen – col.2 lines 29-39).

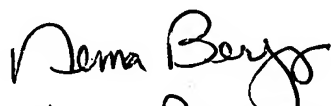
Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nema O Berezny whose telephone number is (571) 272-1686. The examiner can normally be reached on M-F 9-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Carl Whitehead, Jr. can be reached on (571) 272-1702. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

NB


Nema Berezny